

WEB DESIGN AND DEVELOPMENT CURRICULUM FRAMEWORK



This document was prepared by:

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INTRODUCTION

The Nevada CTE Curriculum Frameworks are a resource for Nevada's public and charter schools to design, implement, and assess their CTE programs and curriculum. The content standards identified in this document are listed as a model for the development of local district programs and curriculum. They represent rigorous and relevant expectations for student performance, knowledge, and skill attainment which have been validated by industry representatives.

The intent of this document is to provide a resource to districts as they develop and implement CTE programs and curricula.

This program ensures the following thresholds are met:

- The CTE program teaches the knowledge and skills required by industry through applied learning methodology and, where appropriate, work-based learning experiences that prepare students for careers in high-wage, high-skill and/or high-demand fields.
- The CTE program includes leadership and employability skills as an integral part of the curriculum.
- The CTE program is part of a rigorous program of study and includes sufficient technical challenge to meet state and/or industry-standards.

The CTE program components include the following items:

- Program of Study
- State Skill Standards
- Employability Skills for Career Readiness Standards
- Curriculum Frameworks
- Technical Assessment
- Certification of Program Completion

The Nevada CTE Curriculum Frameworks are organized utilizing the recommended course sequencing listed in the Program of Study and the CTE Course Catalog. The framework identifies the recommended content standards, performance standards, and performance indicators that should be taught in each course.

**NEVADA DEPARTMENT OF EDUCATION
CURRICULUM FRAMEWORK FOR
WEB DESIGN AND DEVELOPMENT**

PROGRAM TITLE:	WEB DESIGN AND DEVELOPMENT
STATE SKILL STANDARDS:	WEB DESIGN AND DEVELOPMENT
STANDARDS REFERENCE CODE:	WEB
CAREER CLUSTER:	INFORMATION TECHNOLOGY
CAREER PATHWAY:	WEB & DIGITAL COMMUNICATIONS
PROGRAM LENGTH:	3 LEVELS (L1, L2, L3C)
PROGRAM ASSESSMENT	WEB DESIGN AND DEVELOPMENT
CTSO:	FBLA / SkillsUSA
GRADE LEVEL:	9-12
AVAILABLE INDUSTRY CERTIFICATIONS/LICENSES PROVIDERS:	CIW SITE DEVELOPMENT ASSOCIATE/ADOBE CERTIFIED ASSOCIATE (ACA): PHOTOSHOP, DREAMWEAVER, FLASH

PROGRAM PURPOSE

The purpose of this program is to prepare students for postsecondary education and employment in the Web Design and Development industry.

The program includes the following state standards:

- Nevada CTE Skill Standards: Web Design and Development
- Employability Skills for Career Readiness
- Common Core State Standards (alignment shown in the Nevada CTE Skill Standards)
- Nevada State Science Standards (alignment shown in the Nevada CTE Skill Standards)
- Common Career Technical Core (alignment shown in the Nevada CTE Skill Standards)

CAREER CLUSTERS

The National Career Clusters™ Framework provides a vital structure for organizing and delivering quality CTE programs through learning and comprehensive programs of study (POS). In total, there are 16 Career Clusters in the National Career Clusters™ Framework, representing more than 79 Career Pathways to help students navigate their way to greater success in college and career. As an organizing tool for curriculum design and instruction, Career Clusters™ provide the essential knowledge and skills for the 16 Career Clusters™ and their Career Pathways.*

*Cite: National Association of State Directors of Career Technical Education Consortium. (2012). Retrieved from <http://www.careertech.org/career-clusters/glance/careerclusters.html>

PROGRAM OF STUDY

The program of study illustrates the sequence of academic and career and technical education coursework that is necessary for the student to successfully transition into postsecondary educational opportunities and employment in their chosen career path.

CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSO)

To further the development of leadership and technical skills, students must have opportunities to participate in one or more of the Career and Technical Student Organizations (CTSOs). CTSOs develop character, citizenship, and the technical, leadership and teamwork skills essential for the workforce and their further education. Their activities are considered a part of the instructional day when they are directly related to the competencies and objectives in the course. (per NAC 389.800 section 3a)

PROGRAM STRUCTURE

The core course sequencing provided in the following table serves as a guide to schools for their programs of study. Each course is listed in the order in which it should be taught and has a designated level. Complete program sequences are essential for the successful delivery of all state standards in each program area.

WEB DESIGN AND DEVELOPMENT Core Course Sequence	
COURSE NAME	LEVEL
Web Design and Development I	L1
Web Design and Development II	L2
Web Design and Development III	L3C

The core course sequencing with the complementary courses provided in the following table serves as a guide to schools for their programs of study. Each course is listed in the order in which it should be taught and has a designated level. A program does not have to utilize all of the complementary courses in order for their students to complete their program of study. Complete program sequences are essential for the successful delivery of all state standards in each program area.

WEB DESIGN AND DEVELOPMENT Core Course Sequence with Complementary Courses	
COURSE NAME	LEVEL
Web Design and Development I	L1
Web Design and Development II	L2
Web Design and Development II LAB *	L2L
Web Design and Development III	L3C
Web Design and Development III LAB *	L3L
Web Design and Development Advanced Studies *	AS

*Complementary Courses

EMPLOYABILITY SKILLS FOR CAREER READINESS

Employability skills, often referred to as “soft skills”, have for many years been a recognizable component of the standards and curriculum in career and technical education programs. The twenty-one standards are organized into three areas: (1) Personal Qualities and People Skills; (2) Professional Knowledge and Skills; and (3) Technology Knowledge and Skills. The standards are designed to ensure students graduate high school properly prepared with skills employers prioritize as the most important. Instruction on all twenty-one standards should be part of each course of the CTE program. Students are expected to demonstrate proficiency in the Employability Skills for Career Readiness upon completion of a CTE course sequence. (per NAC 389.800 section 1)

CTE / ACADEMIC CREDIT

Career and technical education courses meet the credit requirements for high school graduation (1 unit of arts and humanities or career and technical education). Some career and technical education courses meet academic credit for high school graduation. Please refer to the local high schools course catalog or contact the local high school counselor for more information. (per NAC 389.672)

TECHNICAL ASSESSMENT

An end-of-program technical assessment has been developed to align with the Nevada CTE Skill Standards for this program. This assessment provides a measurement of student technical skill attainment. Students who complete a program will be assessed on their skill attainment during the completion level course. Completion level courses are identified by the letter “C”. (Level = L3C) (per NAC 389.800 section 1)

ARTICULATION

An articulation agreement is an officially approved agreement that matches coursework between the secondary and postsecondary institutions. These agreements are designed to help students make a smooth transition from secondary to postsecondary institutions. The articulation agreement identifies the specific courses that align and are accepted for credit at the postsecondary level.

Each local high school and college maintains their agreements. Please refer to the local high schools course catalog or contact the local high school counselor for more information.

CERTIFICATION OF PROGRAM COMPLETION

A student must be given a certificate upon completion of a course of study in an occupation which states the level of performance the pupil has attained in specific skills identified by representatives of business or industry. (per NAC 389.800 section 3b)

CTE GRADUATION ENDORSEMENT

A student qualifies for a CTE endorsement on their high school diploma after successfully completing the CTE program of study and meeting all academic requirements governing receipt of a standard diploma. (per NAC 389.815)

**CORE COURSE:
RECOMMENDED STUDENT PERFORMANCE STANDARDS**

COURSE TITLE:	Web Design and Development I
ABBR. NAME:	WEB DESG DEV I
CREDITS:	1
LEVEL:	L1
CIP CODE:	11.0801
PREREQUISITE:	None
CTSO:	FBLA / SkillsUSA

COURSE DESCRIPTION

This course is designed to introduce students to the basic elements of web design and development. Students will learn about content placement, use of color and graphics, typography and message using industry-standard software. Students are introduced to various web design languages, design concepts, and layout theory. Students will become familiar with marketing and other uses of websites; as well as ethical and legal issues related to websites.

TECHNICAL STANDARDS

CONTENT STANDARD 1.0 : UNDERSTAND THE FOUNDATIONS OF WEB DESIGN AND DEVELOPMENT

Performance Standard 1.1 : Understand The History Of Web Design And Development

Performance Indicators : 1.1.1-1.1.5

Performance Standard 1.2 : Layout And Design Theory

Performance Indicators : 1.2.1-1.2.6

Performance Standard 1.3 : Demonstrate Knowledge of Industry Terminology

Performance Indicators : 1.3.1-1.3.2

CONTENT STANDARD 2.0 : UNDERSTAND ETHICAL USE OF INFORMATION

Performance Standard 2.1 : Understand Copyright Laws in Relationship to Web Development

Performance Indicators : 2.1.1-2.1.4

Performance Standard 2.2 : Understand Security Issues in Relation to Web Development

Performance Indicators : 2.2.1-2.2.4

Performance Standard 2.3 : Apply Personal and Professional Ethics

Performance Indicators : 2.3.1-2.3.3

CONTENT STANDARD 3.0 : CONSTRUCT A WEBSITE

Performance Standard 3.1 : Develop a File Management System

Performance Indicators : 3.1.1-3.1.5

Performance Standard 3.2 : Demonstrate Proper Layout Techniques

Performance Indicators : 3.2.1-3.2.5

Performance Standard 3.3 : Create Web Content

Performance Indicators : 3.3.1-3.3.6

Performance Standard 3.4 : Create Media for the Web

Performance Indicators : 3.4.1-3.4.4, 3.4.6

Performance Standard 3.5 : Demonstrate Knowledge of Challenges Associated With Accessibility and Usability

Performance Indicators : 3.5.1-3.5.4

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Performance Standard 3.6 : Understand the Impact of Marketing, Analytics, and Branding

Performance Indicators : 3.6.1-3.6.5

Performance Standard 3.7 : Update and Maintain Web Content

Performance Indicators : 3.7.1-3.7.4

CONTENT STANDARD 4.0 : UNDERSTAND THE PROCESS OF PUBLISHING A WEBSITE

Performance Standard 4.1 : Understand Fundamentals of a Web Server

Performance Indicators : 4.1.1-4.1.4

Performance Standard 4.2 : Demonstrate Publishing to the Web

Performance Indicators : 4.2.1-4.2.5

CONTENT STANDARD 5.0 : DEMONSTRATE KNOWLEDGE OF WEB PROGRAMMING

Performance Standard 5.1 : Develop a Website Using Hypertext Markup Language (HTML)

Performance Indicators : 5.1.1-5.1.5

Performance Standard 5.2 : Understand Concepts and Use of Cascading Style Sheets (CSS)

Performance Indicators : 5.2.1-5.2.6

CONTENT STANDARD 6.0 : UNDERSTAND ADVANCED AND EMERGING TECHNOLOGIES IN WEB DEVELOPMENT

Performance Standard 6.1 : Understand E-Commerce Concepts

Performance Indicators : 6.1.1

Performance Standard 6.2 : Understand the Role of Social Media

Performance Indicators : 6.2.1-6.2.3

Performance Standard 6.3 : Utilize Cloud Computing Resources

Performance Indicators : 6.3.1-6.3.2

EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS

CONTENT STANDARD 1.0 : DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS

Performance Standard 1.1 : Demonstrate Personal Qualities and People Skills

Performance Indicators : 1.1.1-1.1.7

Performance Standard 1.2 : Demonstrate Professional Knowledge and Skills

Performance Indicators : 1.2.1-1.2.10

Performance Standard 1.3 : Demonstrate Technology Knowledge and Skills

Performance Indicators : 1.3.1-1.3.4

ALIGNMENT TO COMMON CORE AND STATE SCIENCE STANDARDS*

English Language Arts: Reading Standards for Literacy in Science and Technical Subjects
Writing Standards for Literacy in Science and Technical Subjects
Speaking and Listening

Mathematics: Mathematical Practices

* Refer to the Web Design and Development Standards for alignment by performance indicator

**CORE COURSE:
RECOMMENDED STUDENT PERFORMANCE STANDARDS**

COURSE TITLE:	Web Design and Development II
ABBR. NAME:	WEB DESG DEV II
CREDITS:	1
LEVEL:	L2
CIP CODE:	11.0801
PREREQUISITE:	Web Design and Development I
CTSO:	FBLA / SkillsUSA

COURSE DESCRIPTION

This course is a continuation of Web Design and Development I. This course is designed for intermediate students to create websites for a variety of purposes. Students will develop their knowledge of content, placement, use of color and graphics, typography and message using industry-standard software. Students will use various web design languages, design concepts, and layout theories to create their websites. Students will examine the role of marketing and market research as it relates to websites, as well as ethical and legal issues related to websites. Project-based learning, collaboration, and portfolio development are essential elements of this class. The appropriate use of technology and industry-standard equipment is an integral part of this course.

TECHNICAL STANDARDS

CONTENT STANDARD 1.0 : UNDERSTAND THE FOUNDATIONS OF WEB DESIGN AND DEVELOPMENT

Performance Standard 1.3 : Demonstrate Knowledge of Industry Terminology

Performance Indicators : 1.3.1-1.3.2

CONTENT STANDARD 2.0 : UNDERSTAND ETHICAL USE OF INFORMATION

Performance Standard 2.3 : Apply Personal and Professional Ethics

Performance Indicators : 2.3.1-2.3.3

CONTENT STANDARD 3.0 : CONSTRUCT A WEBSITE

Performance Standard 3.1 : Develop a File Management System

Performance Indicators : 3.1.4

Performance Standard 3.2 : Demonstrate Proper Layout Techniques

Performance Indicators : 3.2.5

Performance Standard 3.3 : Create Web Content

Performance Indicators : 3.3.1-3.3.3, 3.3.5-3.3.6

Performance Standard 3.4 : Create Media for the Web

Performance Indicators : 3.4.1-3.4.5

Performance Standard 3.5 : Demonstrate Knowledge of Challenges Associated With Accessibility and Usability

Performance Indicators : 3.5.1-3.5.4

Performance Standard 3.6 : Understand the Impact of Marketing, Analytics, and Branding

Performance Indicators : 3.6.1-3.6.5

Performance Standard 3.7 : Update and Maintain Web Content

Performance Indicators : 3.7.1-3.7.4

CONTENT STANDARD 4.0 : UNDERSTAND THE PROCESS OF PUBLISHING A WEBSITE

Performance Standard 4.1 : Understand Fundamentals of a Web Server

Performance Indicators : 4.1.1-4.1.4

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Performance Standard 4.2 : Demonstrate Publishing to the Web

Performance Indicators : 4.2.4-4.2.5

CONTENT STANDARD 5.0 : DEMONSTRATE KNOWLEDGE OF WEB PROGRAMMING

Performance Standard 5.2 : Understand Concepts and Use of Cascading Style Sheets (CSS)

Performance Indicators : 5.2.6

Performance Standard 5.3 : Understand Foundations of Web Scripting

Performance Indicators : 5.3.1-5.3.5

Performance Standard 5.5 : Utilize Content Management Systems in Web Development

Performance Indicators : 5.5.1-5.5.3

CONTENT STANDARD 6.0: UNDERSTAND ADVANCED AND EMERGING TECHNOLOGIES IN WEB DEVELOPMENT

Performance Standard 6.1 : Understand E-Commerce Concepts

Performance Indicators : 6.1.1

Performance Standard 6.2 : Understand the Role of Social Media

Performance Indicators : 6.2.3-6.2.4

Performance Standard 6.3 : Utilize Cloud Computing Resources

Performance Indicators : 6.3.3

EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS

CONTENT STANDARD 1.0 : DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS

Performance Standard 1.1 : Demonstrate Personal Qualities and People Skills

Performance Indicators : 1.1.1-1.1.7

Performance Standard 1.2 : Demonstrate Professional Knowledge and Skills

Performance Indicators : 1.2.1-1.2.10

Performance Standard 1.3 : Demonstrate Technology Knowledge and Skills

Performance Indicators : 1.3.1-1.3.4

ALIGNMENT TO COMMON CORE AND STATE SCIENCE STANDARDS*

English Language Arts: Reading Standards for Literacy in Science and Technical Subjects
Writing Standards for Literacy in Science and Technical Subjects
Speaking and Listening

Mathematics: Mathematical Practices

* Refer to the Web Design and Development Standards for alignment by performance indicator

**CORE COURSE:
RECOMMENDED STUDENT PERFORMANCE STANDARDS**

COURSE TITLE:	Web Design and Development III
ABBR. NAME:	WEB DESG DEV III
CREDITS:	1
LEVEL:	L3C
CIP CODE:	11.0801
PREREQUISITE:	Web Design and Development II
CTSO:	FBLA / SkillsUSA
<u>COURSE DESCRIPTION</u> <p>This course is a continuation of Web Design and Development II. This course is designed for advanced students to create websites for a variety of purposes using advanced techniques and processes. Areas of study include automation, animation and interactivity in websites, as well as, web servers and a more extensive knowledge of website construction. Project-based learning, collaboration, and portfolio development are essential elements of this class. The appropriate use of technology and industry-standard equipment is an integral part of this course. Upon successful completion of this course, students will have acquired entry-level skills for employment in this field.</p>	

TECHNICAL STANDARDS

CONTENT STANDARD 1.0 : UNDERSTAND THE FOUNDATIONS OF WEB DESIGN AND DEVELOPMENT

Performance Standard 1.3 : Demonstrate Knowledge of Industry Terminology

Performance Indicators : 1.3.1-1.3.2

CONTENT STANDARD 2.0 : UNDERSTAND ETHICAL USE OF INFORMATION

Performance Standard 2.3 : Apply Personal and Professional Ethics

Performance Indicators : 2.3.1-2.3.3

CONTENT STANDARD 3.0 : CONSTRUCT A WEBSITE

Performance Standard 3.2 : Demonstrate Proper Layout Techniques

Performance Indicators : 3.2.5

Performance Standard 3.3 : Create Web Content

Performance Indicators : 3.3.1-3.3.3, 3.3.5-3.3.6

Performance Standard 3.4: Create Media for the Web

Performance Indicators : 3.4.1-3.4.4

Performance Standard 3.5 : Demonstrate Knowledge of Challenges Associated With Accessibility and Usability

Performance Indicators : 3.5.1-3.5.4

Performance Standard 3.6 : Understand the Impact of Marketing, Analytics, and Branding

Performance Indicators : 3.6.1-3.6.5

Performance Standard 3.7 : Update and Maintain Web Content

Performance Indicators : 3.7.1-3.7.4

CONTENT STANDARD 4.0 : UNDERSTAND THE PROCESS OF PUBLISHING A WEBSITE

Performance Standard 4.2 : Demonstrate Publishing to the Web

Performance Indicators : 4.2.4-4.2.5

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CONTENT STANDARD 5.0 : DEMONSTRATE KNOWLEDGE OF WEB PROGRAMMING

Performance Standard 5.3 : Understand Foundations of Web Scripting

Performance Indicators : 5.3.1-5.3.5

Performance Standard 5.4 : Understand Databases

Performance Indicators : 5.4.1-5.4.4

Performance Standard 5.5 : Utilize Content Management Systems in Web Development

Performance Indicators : 5.5.1-5.5.3

CONTENT STANDARD 6.0 : UNDERSTAND ADVANCED AND EMERGING TECHNOLOGIES IN WEB DEVELOPMENT

Performance Standard 6.1 : Understand E-Commerce Concepts

Performance Indicators : 6.1.1-6.1.3

Performance Standard 6.2 : Understand the Role of Social Media

Performance Indicators : 6.2.3-6.2.4

Performance Standard 6.3 : Utilize Cloud Computing Resources

Performance Indicators : 6.3.3

EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS**CONTENT STANDARD 1.0 : DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS**

Performance Standard 1.1 : Demonstrate Personal Qualities and People Skills

Performance Indicators : 1.1.1-1.1.7

Performance Standard 1.2 : Demonstrate Professional Knowledge and Skills

Performance Indicators : 1.2.1-1.2.10

Performance Standard 1.3 : Demonstrate Technology Knowledge and Skills

Performance Indicators : 1.3.1-1.3.4

ALIGNMENT TO COMMON CORE AND STATE SCIENCE STANDARDS*

English Language Arts: Reading Standards for Literacy in Science and Technical Subjects
Writing Standards for Literacy in Science and Technical Subjects
Speaking and Listening

Mathematics: Mathematical Practices

* Refer to the Web Design and Development Standards for alignment by performance indicator

COMPLEMENTARY COURSE(S):

Programs that utilize the complementary courses can include the following courses. The Advanced Studies course allows for additional study through investigation and in-depth research.

COURSE TITLE:	Web Design and Development Advanced Studies
ABBR. NAME:	WEB DESG DEV AS
CREDITS:	1
LEVEL:	AS
CIP CODE:	11.0801
PREREQUISITE:	Web Design and Development III
CTSO:	FBLA/SkillsUSA

COURSE DESCRIPTION

This course is offered to students who have achieved all content standards in a program whose desire is to pursue advanced study through investigation and in-depth research. Students are expected to work independently or in a team and consult with their supervising teacher for guidance. The supervising teacher will give directions, monitor, and evaluate the students' topic of study. Coursework may include various work-based learning experiences such as internships and job shadowing, involvement in a school-based enterprise, completion of a capstone project, and/or portfolio development. This course may be repeated for additional instruction and credit.

TECHNICAL STANDARDS

Students have achieved all program content standards and will pursue advanced study through investigation and in-depth research.

EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS

Students have achieved all program content standards and will pursue advanced study through investigation and in-depth research.

SAMPLE TOPICS

- Teaching assistant
- School webmaster
- School-based enterprise
- Work-based learning experiences

COMPLEMENTARY COURSE(S):
RECOMMENDED STUDENT PERFORMANCE STANDARDS

Programs that utilize the Complementary Courses can include the following courses. The lab courses allow additional time to be utilized in developing the processes, concepts, and principles as described in the classroom instruction. The standards and performance indicators for each lab course are shown in the corresponding course listed in the previous section.

COURSE TITLE:	Web Design and Development II LAB
ABBR. NAME:	WEB DESG DEV II LAB
CREDITS:	1
LEVEL:	L2L
CIP CODE:	11.0801
PREREQUISITE:	Concurrent Enrollment in Web Design and Development II
CTSO:	FBLA / SkillsUSA
<u>COURSE DESCRIPTION</u> This course is designed to expand the students' opportunities for applied learning. This course provides an in-depth lab experience that applies the processes, concepts, and principles as described in the classroom instruction. The coursework will encourage students to explore and develop advanced skills in their program area. The appropriate use of technology and industry-standard equipment is an integral part of this course.	

COURSE TITLE:	Web Design and Development III LAB
ABBR. NAME:	WEB DESG DEV III LAB
CREDITS:	1
LEVEL:	L3L
CIP CODE:	11.0801
PREREQUISITE:	Concurrent Enrollment in Web Design and Development III
CTSO:	FBLA / SkillsUSA
<u>COURSE DESCRIPTION</u> This course is designed to expand the students' opportunities for applied learning. This course provides an in-depth lab experience that applies the processes, concepts, and principles as described in the classroom instruction. The coursework will encourage students to explore and develop advanced skills in their program area. The appropriate use of technology and industry-standard equipment is an integral part of this course.	